# Comprehensive Environmental Management Systems Approach: The Right Philosophy for the Long-Term Stewardship Job

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# Outline

Outsider's Perception of Long-Term Stewardship Program

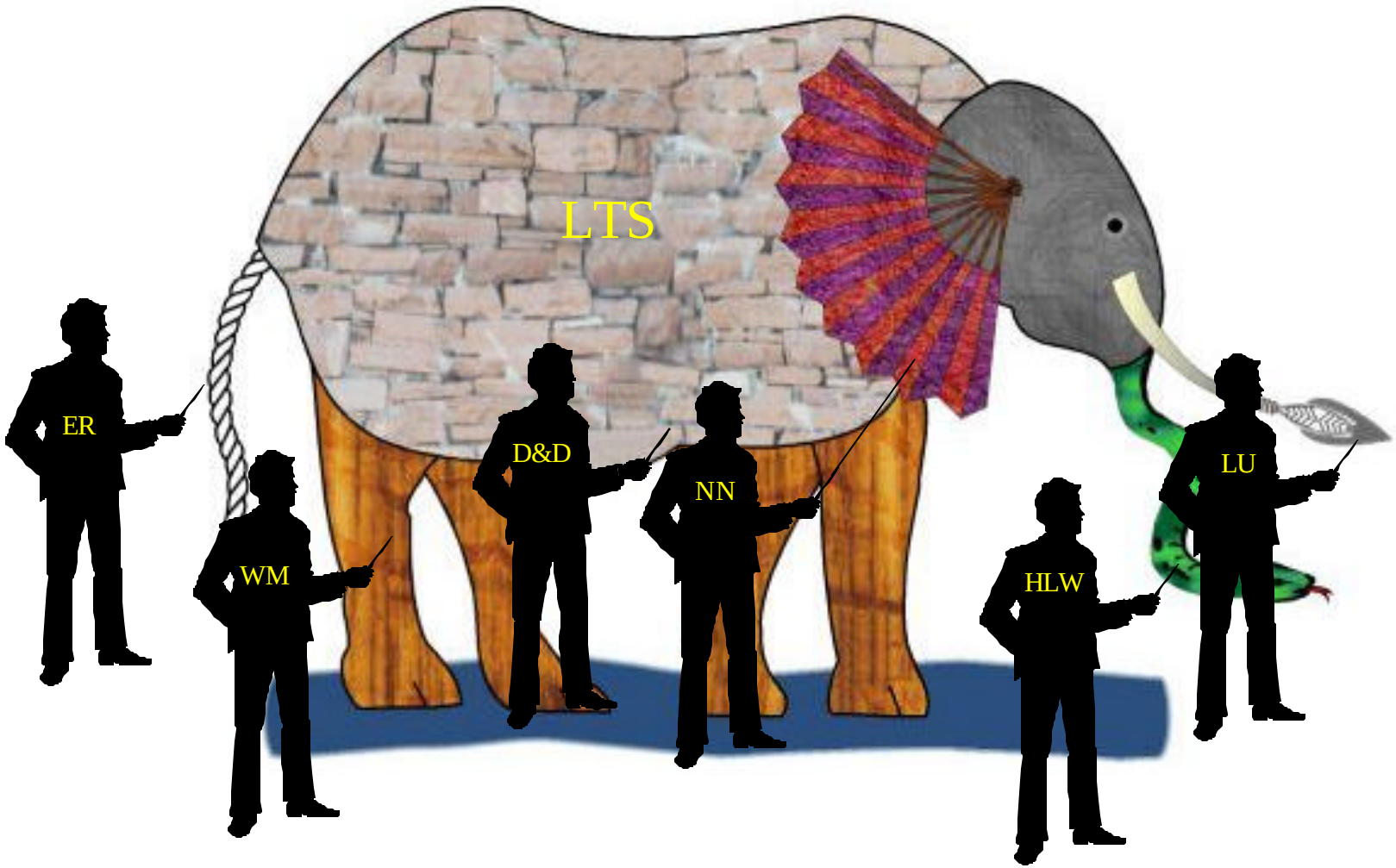
Alternate Philosophical View of Stewardship

LTS Management Tool

- Expand Capabilities Existing within the DOE Complex
- Examples from SRS Experience

Conclusions

# The DOE Long-Term Stewardship Elephant



# Stove Pipe View

Environmental Restoration - Sites closed/remediated/stabilized

Waste Management - Waste disposed or shipped offsite

Decontamination and Decommissioning - Buildings empty/demolished

Nuclear Nonproliferation - Plutonium immobilized

High Level Waste - Tanks closed/Waste to repository

Land Use - Deed restrictions/Institutional Controls in place

Long Term Stewardship - Landlord Program

# Alternative Philosophy

Long-Term Stewardship begins today.

Actions taken today will have an impact far into the future.

Programmatic decisions (e.g., ER, WM) should be made in a holistic manner

Future decisions must be made with consideration of the effects of decisions already made.

# Comprehensive Environmental Management Systems Approach

Conceived as part of DOE-EM's response to DNFSB 94-2

Ensures the long-term protection of public health and safety and the environment from all sources of radioactive material after remediation and disposal programs are completed

Integrates land-use planning, facility decommissioning, environmental restoration, and waste management operations

Provides a tool to facilitate management decisions leading to safe and cost effective site-wide long-term stewardship

# Lessons Learned Report

*Developing the Report to Congress on Long-Term Stewardship, Lessons Learned and Recommendations for Future Planning*, Final Draft, 6/19/2001

Five of the nine lessons learned can be addressed using the LTS Management Tool:

Lack of a consistent definition of the scope of LTS.

Lack of consistent management and planning structures for LTS.

Limitation is estimating costs for LTS.

Lack of site-specific LTS plans.

Lack of integration between technology and LTS.

# Long-Term Stewardship Management Tool

Identify all potential sources of dose or risk on a site

Conceptualize a final configuration for the site

Estimate residual inventories

Project contaminant migration, environmental concentrations, doses and risks in a disciplined, systematic manner

Evaluate management options for risk reduction in light of associated costs and programmatic objectives while complying with regulatory imperatives

# Composite Analysis

Analyzes radiological impacts to hypothetical future individuals and populations from residual radioactivity after DOE operations cease

Applied to regions of a site containing multiple potential sources of contamination near LLW disposal facilities

Uses:

- Ensure that present actions will not compromise future radiological protection of the general population
- Risk identification/ranking
- ALARA Analysis
- Cost-Benefit analyses

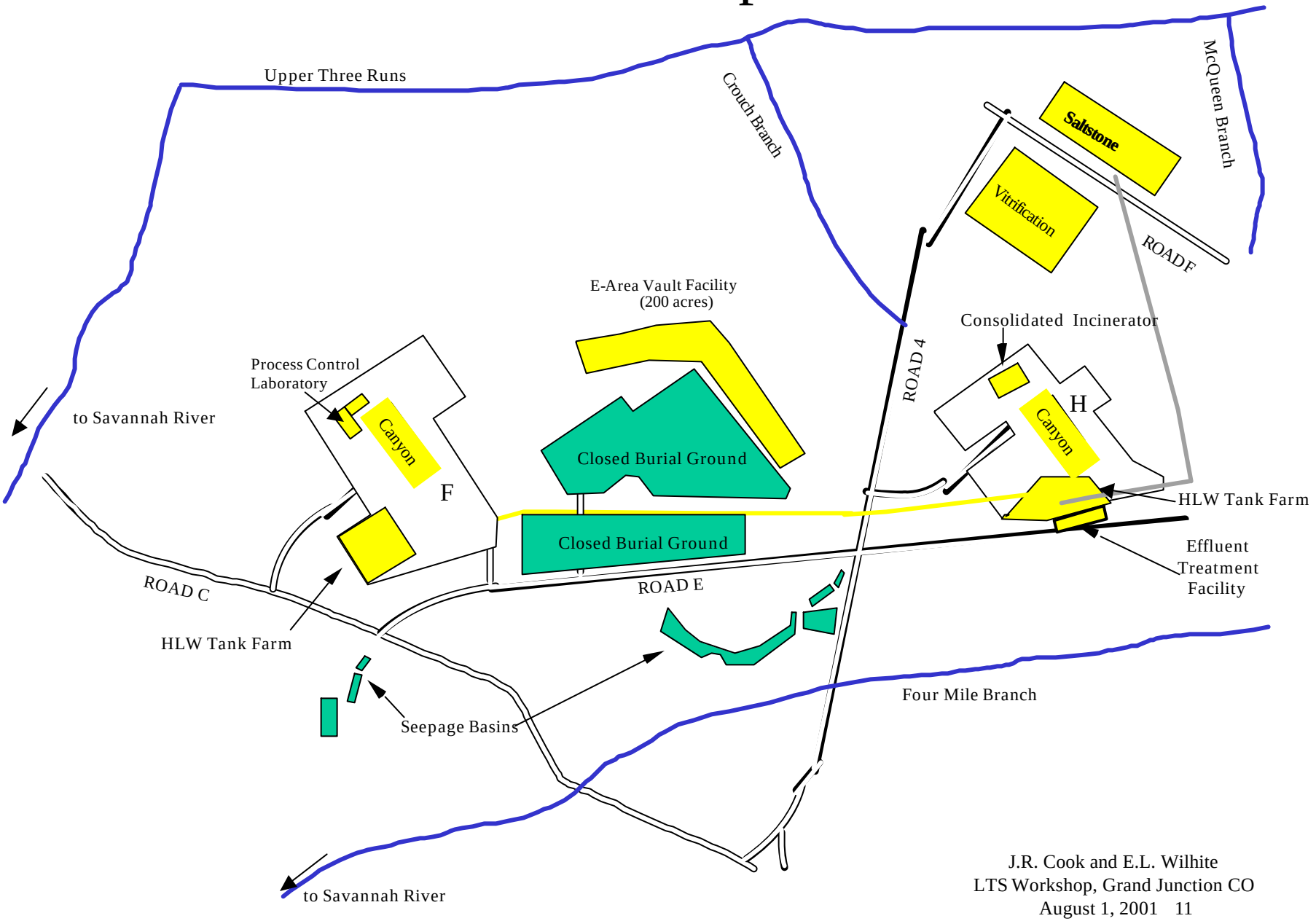
# SRS Composite Analysis

Study area - Central part of site (General Separations Area)

Separations plants, Radioactive Waste burial grounds, High Level waste tank farm, closed waste units

114 facilities, 115 radionuclides

# Facilities in General Separations Area



# Savannah River Site

# Geographical Information System

Display of environmental data in space and time

Provides data analysis capability

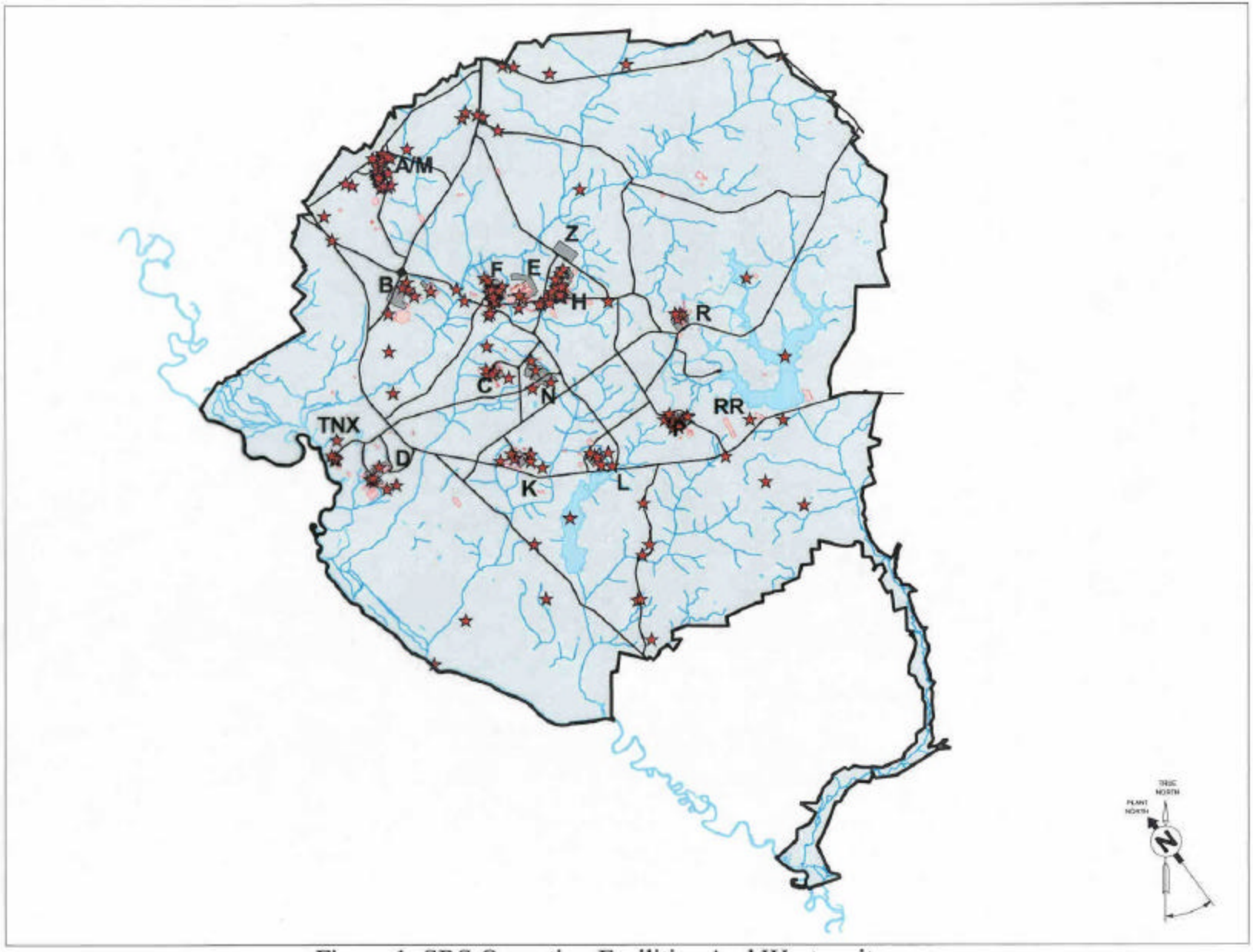



Figure 1: SRS Operating Facilities And Wasteunits

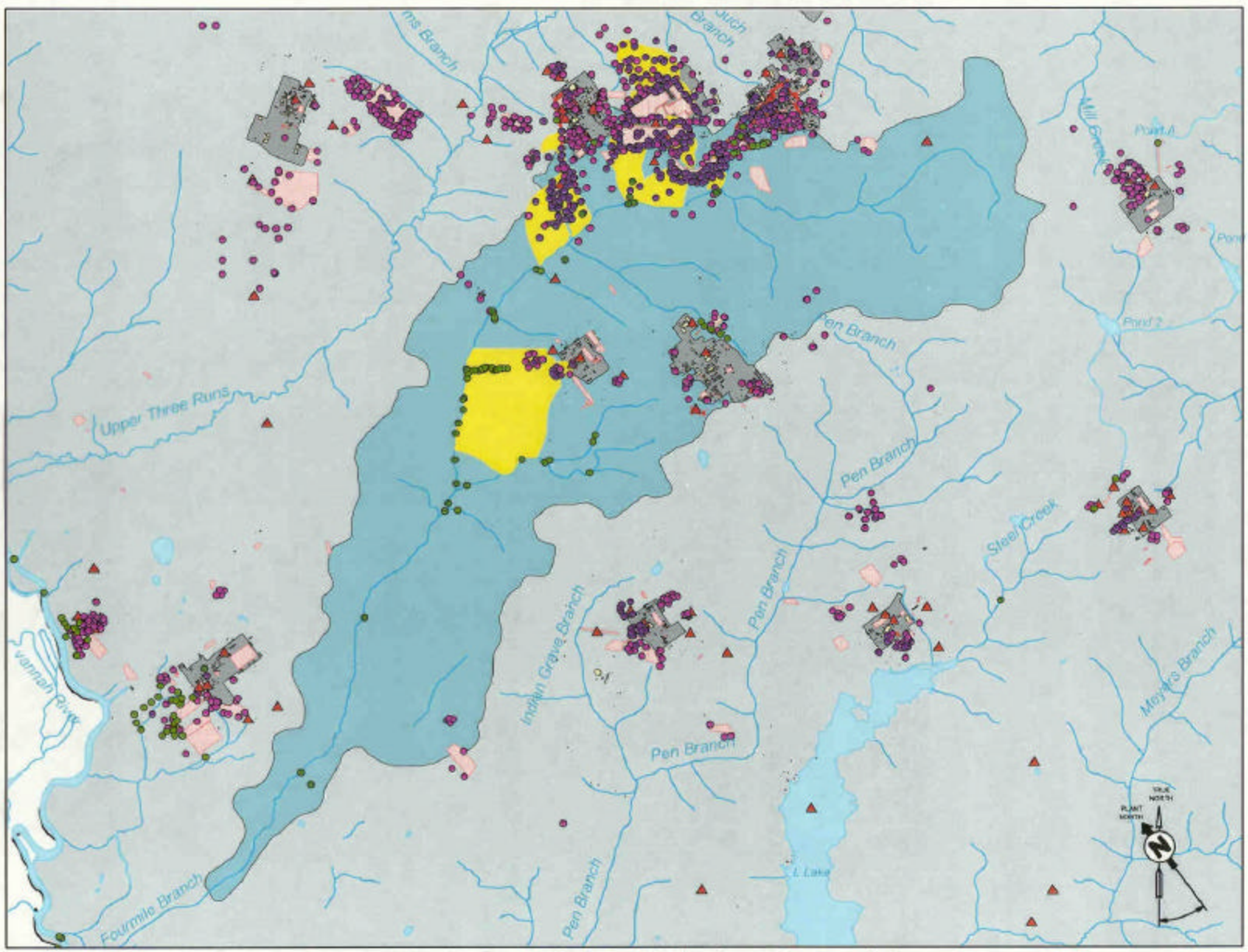



Figure 2: Tritium in Fourmile Branch Surface Water and Groundwater

# Conclusion

For **Long-Term Stewardship**:

**Comprehensive Environmental Management Systems Approach** is the philosophical basis

**LTS Management Tool** provides the programmatic and decision making tools

**Composite Analysis** experience provides the methodology